WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS PATENT OF THE UNITED STATES IS:

1. A light source unit for emanating light beams, comprising:

a plurality of light sources;

a plurality of coupling lenses each corresponding to a light source of said plurality of light sources;

a coupling lens holding unit having a first and a second holding faces aligned approximately in parallel to an optical axis of a first coupling lens of said plurality of coupling lenses; and

an elastically pressing member pressing a side portion of said first coupling lens against said first and said second holding faces so as to thereby hold said first coupling lens.

2. The light source unit according to claim 1, further comprising:

a light source holding unit holding a first light source of the plurality of light sources corresponding to said first coupling lens; and

a fixing member fixing said light source holding unit,

wherein said fixing member fixes a position of said first light source displaceable over a plane perpendicular to said optical axis of said first coupling lens.

3. The light source unit according to claim 2, wherein said fixing member fixes said light source holding unit onto said coupling lens holding unit.

4. The light source unit according to claim 2, wherein at least one of said first coupling lens and said holding face is provided with a lubricating

means at a location in contact there between.

5. The light source unit according to claim 2, wherein a portion of said first coupling lens in contact with said holding face is subjected to surface hardening.

6. The light source unit according to claim 1, wherein a supporting unit is formed, as one set, consisting of said first and second holding faces aligned approximately in parallel to said optical axis of said first coupling lens for holding said first coupling lens, and at least two sets of said supporting unit are formed integrally as one component.

7. The light source unit according to claim 1, wherein a supporting unit is formed, as one set, consisting of said first and second holding faces aligned approximately in parallel to said optical axis of said first coupling lens for holding said first coupling lens, and at least two sets of said supporting unit are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is equal to each other.

8. The light source unit according to claim 1, wherein a supporting unit is formed, as one set, consisting of said first and second holding faces aligned approximately in parallel to said optical axis of said first coupling lens for holding said first coupling lens, and at least two sets of said supporting unit are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is symmetrical to each other.

9. The light source unit according to claim 1, wherein at least one of said first coupling lens and said holding face is provided with a lubricating means at a location in contact there between.

10. The light source unit according to claim 1, wherein a portion of said first coupling lens in contact with said holding face is subjected to surface hardening.

11. The light source unit according to claim 1, wherein said elastically pressing member is formed of planar elastic material, and wherein ends of said elastically pressing member are fixed so as to hold in between said portion of said first coupling lens in contact with said holding face.

12. The light source unit according to claim 11, wherein said ends of said elastically pressing member are fixed approximately symmetric with respect to said portion of said first coupling lens in contact with said holding face.

13. The light source unit according to claim 11, wherein said elastically pressing member has a coefficient of linear expansion approximately equal to that of a material of said coupling lens holding unit.

14. The light source unit according to claim 1, further comprising:

a light source holding unit holding a first light source of said plurality of light sources attached to said coupling lens holding unit, said first light source corresponding to said first coupling lens,

wherein said coupling lens holding unit, a package unit of a semiconductor laser diode, and said light source holding unit are formed of materials which are selected to satisfy the following relationships:

$$\alpha 1 \leqq \alpha 3,\ \alpha 1 \leqq \alpha 2 \leqq \alpha 3 \text{ and } \alpha 1 \leqq \alpha 4 \leqq \alpha 3,$$

where $\alpha 1$(1/K), $\alpha 2$(1/K), $\alpha 3$(1/K) and $\alpha 4$(1/K) are coefficients of linear thermal expansion of said first coupling lens, said coupling lens holding unit, said package unit and said light source holding unit, respectively.

15. The light source unit according to claim 1, further comprising:

a light source holding unit attached to said coupling lens holding unit for holding a first light source of said plurality of light sources corresponding to said first coupling lens,

wherein said coupling lens holding unit, a package unit of a semiconductor laser diode, and said light source holding unit are formed of materials which are selected to satisfy the following relationships:

$$\alpha 3 < \alpha 1,\ \alpha 3 \leqq \alpha 2 \leqq \alpha 1 \text{ and } \alpha 3 \leqq \alpha 4 \leqq \alpha 1,$$

where $\alpha 1$(1/K), $\alpha 2$(1/K), $\alpha 3$(1/K) and $\alpha 4$(1/K) are coefficients of linear thermal expansion of said first coupling lens, said coupling lens holding unit, said package unit and said light source holding unit, respectively.

16. A light beam scanning unit, comprising:

said light source unit recited in claim 1;

a light beam deflection unit adapted to receive and subsequently deflect light beams emanated from said light source unit; and

an optics system adapted to focus the light beams onto a member to be scanned and scanning along a primary scanning direction.

17. The light beam scanning unit according to claim 16, wherein a plurality of light beams are scanned, the plurality of light beams each being emanated by a plurality of said light source units arranged in a row.

18. A light beam scanning unit, comprising:

said light source unit recited in claim 1;

a light source holding unit attached to said coupling lens holding unit for holding a first light source of said plurality of light sources corresponding to said first coupling lens;

a light beam deflection unit adapted to receive and subsequently deflect light beams emanated from said light source unit; and

an optics system adapted to focus the light beams onto a member to be scanned and scanning along a primary scanning direction,

wherein said first coupling lens, said coupling lens holding unit, a package unit of a semiconductor laser diode, and said light source holding unit are formed of materials which are selected in terms of coefficients of linear thermal expansion $\alpha 1$, $\alpha 2$, $\alpha 3$ and $\alpha 4$, and radii r1 and r3 are adjusted such that a positional deviation of the light beams on the member to be scanned is controlled to be equal to, or smaller than 50% of a dot pitch of the light beams, and

wherein $\alpha 1(1/K)$, $\alpha 2(1/K)$, $\alpha 3(1/K)$ and $\alpha 4(1/K)$ are coefficients of linear thermal expansion of said first coupling lens, said coupling lens holding unit, said package unit and said light source holding unit, respectively; r1 (mm) is a distance from said optical axis of said first coupling lens to a point of contact between said first coupling lens and said holding face; and r3 (mm) is an outer radius of said package unit.

19. The light beam scanning unit according to claim 18, wherein a plurality of light beams are scanned, the plurality of light beams each being emanated by a plurality of said light source units arranged in a row.

20. A light beam scanning unit, comprising:

said light source unit recited in claim 1;

a light source holding unit attached to said coupling lens holding unit for holding a first light source of said plurality of light sources corresponding to said first coupling lens,

a light beam deflection unit adapted to receive and subsequently deflect light beams emanated from said light source unit; and

an optics system adapted to focus the light beams onto a member to be scanned and scanning along a primary scanning direction,

wherein said first coupling lens, said coupling lens holding unit, a package unit of a semiconductor laser diode, and said light source holding unit are formed of materials which are selected in terms of coefficients of linear thermal expansion $\alpha 1$, $\alpha 2$, $\alpha 3$ and $\alpha 4$, and radii r1 and r3 are adjusted so as to satisfy the following relationships:

$$\alpha 2=\alpha 4; \text{ and}$$

$$|\alpha 3\times r3-\{\alpha 1\times r1+\alpha 2\times(r3-r1)\}| \leqq 2.5\times 10^{-5} \text{ (mm/K)},$$

where $\alpha 1$(1/K), $\alpha 2$(1/K), $\alpha 3$(1/K) and $\alpha 4$(1/K) are coefficients of linear thermal expansion of said first coupling lens, said coupling lens holding unit, said package unit and said light source holding unit, respectively; r1 (mm) is a distance from said optical axis of said first coupling lens to a point of contact between said first coupling lens and said holding face; and r3 (mm) is an outer radius of said package unit.

21. The light beam scanning unit according to claim 20, wherein $\alpha 3 \times r3-\{\alpha 1 \times r1+\alpha 2 \times (r3-r1)\}$ is equal t , or smaller than 1 μm at normal temperatures.

22. The light beam scanning unit according to claim 20, wherein a plurality of light beams are scanned simultaneously, the plurality of light beams each being emanated by a plurality of said light source units arranged in a row.

23. An image forming apparatus, comprising:

said light beam scanning unit recited in anyone of claims 16 through 22; and

an image forming unit for rendering an image visible, the image being written by said light beam scanning unit onto an image bearing member corresponding to input image data.

24. The image forming apparatus according to claim 23, wherein said light beam scanning unit and said image forming unit are provided for each color rendered visible by said image forming apparatus.

25. A light source unit for emanating light beams, comprising:

a plurality of light source means;

a plurality of coupling lens means each corresponding to a light source means of said plurality of light source means;

a coupling lens holding means having a first and a second holding face means aligned approximately in parallel to an optical axis of a first coupling lens means of said plurality of coupling lens means; and

an elastically pressing means for pressing a side portion of said first

coupling lens means against said first and said second holding face means so as to hold said first coupling lens means.

26. The light source unit according to claim 25, further comprising:

a light source holding means for holding a first light source means of said plurality of light source means corresponding to said first coupling lens means; and

a fixing means for fixing said light source holding means,

wherein said fixing means operates to fix a position of said first light source means displaceable over a plane perpendicular to said optical axis of said first coupling lens means.

27. The light source unit according to claim 26, wherein said fixing means operates to fix said light source holding means onto said coupling lens holding means.

28. The light source unit according to claim 26, wherein at least one of said first coupling lens means and said holding face means is provided with a lubricating means at a location in contact there between.

29. The light source unit according to claim 26, wherein a portion of said first coupling lens means in contact with said holding face means is subjected to surface hardening.

30. The light source unit according to claim 25, wherein a supporting unit means is formed, as one set, consisting of said first and second holding face means aligned approximately parallel to said optical axis of said first coupling

lens means for holding said first coupling lens means, and at least two sets of said supporting unit means are formed integrally as one component.

31. The light source unit according to claim 25, wherein a supporting means is formed, as one set, consisting of said first and second holding face means aligned approximately in parallel to said optical axis of said first coupling lens means for holding said first coupling lens means, and at least two sets of said supporting means are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is equal to each other.

32. The light source unit according to claim 25, wherein a supporting means is formed, as one set, consisting of said first and second holding face means aligned approximately in parallel to said optical axis of said first coupling lens means for holding said first coupling lens means, and at least two sets of said supporting means are arranged such that a direction of said at least two sets, in terms of a direction of said optical axis, a primary scanning direction and a secondary scanning direction, is symmetrical to each other.

33. The light source unit according to claim 25, wherein at least one of said first coupling lens means and said holding face means is provided with a lubricating means at a location in contact there between.

34. The light source unit according to claim 25, wherein a portion of said first coupling lens means in contact with said holding face means is subjected to surface hardening.

35. The light source unit according to claim 25, wherein said elastically pressing means is formed of planar elastic material, and wherein said elastically pressing means has ends fixed so as to hold in between said portion of said first coupling lens means in contact with said holding face means.

36. The light source unit according to claim 35, wherein said ends of said elastically pressing means are fixed approximately symmetric with respect to said portion of said first coupling lens means in contact with said holding face means.

37. The light source unit according to claim 35, wherein said elastically pressing means has a coefficient of linear expansion approximately equal to that of a material of said coupling lens holding means.

38. The light source unit according to claim 25, further comprising:

a light source holding means for holding a first light source means of said plurality of light source means attached to said coupling lens holding means, said first light source means corresponding to said first coupling lens means,

wherein said coupling lens holding means, a package means of a semiconductor laser diode, and said light source holding means are formed of materials which are selected to satisfy the following relationships:

$$\alpha 1 \leqq \alpha 3,\ \alpha 1 \leqq \alpha 2 \leqq \alpha 3 \text{ and } \alpha 1 \leqq \alpha 4 \leqq \alpha 3,$$

where $\alpha 1(1/K)$, $\alpha 2(1/K)$, $\alpha 3(1/K)$ and $\alpha 4(1/K)$ are coefficients of linear thermal expansion of said first coupling lens means, said coupling lens holding means, said package means and said light source holding means, respectively.

39. The light source unit according to claim 25, further comprising:

a light source holding means attached to said coupling lens holding means for holding a light source means of said plurality of light source means corresponding to said first coupling lens means,

wherein said coupling lens holding means, a package means of a semiconductor laser diode, and said light source holding means are formed of materials which are selected to satisfy the following relationships:

$$\alpha 3 < \alpha 1,\ \alpha 3 \leqq \alpha 2 \leqq \alpha 1 \text{ and } \alpha 3 \leqq \alpha 4 \leqq \alpha 1,$$

where $\alpha 1(1/K)$, $\alpha 2(1/K)$, $\alpha 3(1/K)$ and $\alpha 4(1/K)$ are coefficients of linear thermal expansion of said first coupling lens means, said coupling lens holding means, said package means and said light source holding means, respectively.

40. A light beam scanning unit, comprising:

said light source means recited in claim 25;

a light beam deflection means for receiving and subsequently deflecting light beams emanated from said light source means; and

an optics system means for focusing the light beams onto a means to be scanned and scanning along a primary scanning direction.

41. The light beam scanning unit according to claim 40, wherein a plurality of light beams are scanned, the plurality of light beams each being emanated by a plurality of said light source means arranged in a row.

42. A light beam scanning unit, comprising:

said light source means recited in claim 25;

a light source holding means attached to said coupling lens holding means for holding a first light source means of said plurality of light source means corresponding to said first coupling lens means,

a light beam deflection means for receiving and subsequently deflecting light beams emanated from said first light source means; and

an optics system means for focusing the light beams onto a means to be scanned and scanning along a primary scanning direction,

wherein said first coupling lens means, said coupling lens holding means, a package means of a semiconductor laser diode, and said light source holding means are formed of materials which are selected in terms of coefficients of linear thermal expansion $\alpha 1$, $\alpha 2$, $\alpha 3$ and $\alpha 4$, and radii r1 and r3 are adjusted such that a positional deviation of the light beams on said means to be scanned is controlled to be equal to, or smaller than 50% of a dot pitch of the light beams, and

wherein $\alpha 1(1/K)$, $\alpha 2(1/K)$, $\alpha 3(1/K)$ and $\alpha 4(1/K)$ are coefficients of linear thermal expansion of said first coupling lens means, said coupling lens holding means, said package means and said light source holding means, respectively; r1 (mm) is a distance from an optical axis of said first coupling lens means to a point of contact between said first coupling lens means and said holding face means; and r3 (mm) is an outer radius of said package means.

43. The light beam scanning unit according to claim 42, wherein a plurality of light beams are scanned, the plurality of light beams each being emanated by a plurality of said light source means arranged in a row.

44. A light beam scanning unit, comprising:

said light source means recited in claim 25;

a light source holding means attached to said coupling lens holding means for holding a first light source means of said plurality of light source means corresponding to said first coupling lens means,

a light beam deflection means for receiving and subsequently deflecting light beams emanated from said first light source means; and

an optics system means for focusing the light beams onto a means to be scanned and scanning along a primary scanning direction,

wherein said first coupling lens means, said coupling lens holding means, a package means of a semiconductor laser diode, and said light source holding means are formed of materials which are selected in terms of coefficients of linear thermal expansion $\alpha 1$, $\alpha 2$, $\alpha 3$ and $\alpha 4$, and radii r1 and r3 are adjusted so as to satisfy the following relationships:

$$\alpha 2 = \alpha 4, \text{ and}$$

$$|\alpha 3 \times r3 - \{\alpha 1 \times r1 + \alpha 2 \times (r3 - r1)\}| \leqq 2.5 \times 10^{-5} \text{ (mm/K)},$$

where $\alpha 1$(1/K), $\alpha 2$(1/K), $\alpha 3$(1/K) and $\alpha 4$(1/K) are coefficients of linear thermal expansion of said first coupling lens means, said coupling lens holding means, said package means and said light source holding means, respectively; r1 (mm) is a distance from an optical axis of said first coupling lens means to a point of contact between said first coupling lens means and said holding face means; and r3 (mm) is an outer radius of said package means.

45. The light beam scanning unit according to claim 44, wherein:

$\alpha 3 \times r3 - \{\alpha 1 \times r1 + \alpha 2 \times (r3 - r1)\}$ is equal to, or smaller than 1 μm at normal temperatures.

46. The light beam scanning unit according to claim 44, wherein a plurality of light beams are scanned, the plurality of light beams each being emanated by a plurality of said light source means arranged in a row.

47. An image forming apparatus, comprising:

said light beam scanning means recited in anyone of claims 40 through 46; and

an image forming means for rendering an image visible, said image being written by said light beam scanning means onto an image bearing means corresponding to input image data.

48. The image forming apparatus according to claim 47, wherein said light beam scanning means and said image forming means are provided for each color rendered visible by said image forming apparatus.